

Claims

[c1] 1. An intake manifold for an engine, including an engine block with at least one cylinder inlet which is supplied with an air-fuel mixture from the intake manifold, the intake manifold comprising:

a housing defining an interior cavity and having an exterior surface, the housing having at least one air in-flow passage from the exterior surface of the housing to the interior cavity, and the housing including at least one side wall, the side wall having a substantially planar side wall interior cavity surface and a side wall exterior surface, the side wall defining at least one air-fuel out-flow passage from the interior cavity to the side wall exterior surface, wherein the intake manifold is mounted to engage the engine block so that the air-fuel out-flow passage and the engine cylinder inlet are aligned to allow the air-fuel mixture to pass from the air-fuel out-flow passage to the engine cylinder inlet.

[c2] 2. An intake manifold of claim 1, further comprising:
the side wall exterior surface being substantially planar.

[c3] 3. An intake manifold of claim 1, further comprising:
the air-fuel out-flow passage being between 2.125

inches and 2.225 inches in length.

- [c4] 4. An intake manifold of claim 1, further comprising:
the side wall has a substantially uniform thickness be-
tween the side wall exterior surface and side wall interior
cavity surface.
- [c5] 5. An intake manifold of claim 1, further comprising:
the housing having at least one fuel in-flow passage
from the exterior surface of the housing to the air-fuel
out-flow passage between the interior cavity and the ex-
terior surface of the housing.
- [c6] 6. An intake manifold of claim 5, further comprising:
the air-fuel out-flow passage being between 2.125
inches and 2.225 inches in length.
- [c7] 7. An intake manifold for an engine, including an engine
block with at least one cylinder inlet, the intake manifold
comprising:
a housing having an exterior surface and defining an in-
terior cavity, the housing having at least one air in-flow
passage from the exterior surface of the housing to the
interior cavity, and the housing having at least one side
wall, the side wall having a substantially planar side wall
interior cavity surface and a substantially planar side wall
exterior surface, the side wall defining at least one air-

fuel out-flow passage from the interior cavity to the side wall exterior surface.

- [c8] 8. An intake manifold for an engine, including an engine block with at least one cylinder inlet, the intake manifold comprising:
 - a housing having an exterior surface and defining an interior cavity, the housing having at least one air in-flow passage from the exterior surface of the housing to the interior cavity, the housing having at least one side wall, the side wall defining at least one air-fuel out-flow passage from the interior cavity to the side wall exterior surface, and the housing defining at least one fuel in-flow passage from the exterior surface of the housing and opening into the air-fuel out-flow passage.
- [c9] 9. An intake manifold of claim 8, further comprising:
 - the housing defining at least one fuel in-flow passage from the exterior surface of the housing and opening into the air-fuel out-flow passage between the interior cavity and the exterior surface of the housing.
- [c10] 10. An intake manifold for an engine, including an engine block with at least one cylinder inlet, the engine of a set height with a pre-existing intake manifold, where the intake manifold with an air compressor replaces a pre-existing intake manifold, the intake manifold compris-

ing:

a housing having an exterior surface and defining an interior cavity, the housing having at least one air in-flow passage from the exterior surface of the housing to the interior cavity, the housing having at least one air-fuel out-flow passage from the interior cavity to the exterior surface of the housing, and the housing including an upper section and a lower section, the upper section mounted on the lower section, the upper section having an upper section interior cavity surface and an upper section exterior surface, the upper section having one or more air compressor mounting passages from the upper section interior cavity surface to the upper section exterior surface, the air compressor mounting passages extend through the upper section to enable one or more air compressor mounting fasteners to mount the air compressor to the upper section exterior surface; the air compressor mounted on the upper section; and the lower section mounted on the engine such that the engine is not substantially of a greater height with the intake manifold and the air compressor mounted than the set height.

[c11] 11. An intake manifold of claim 10, further comprising: the housing being no greater than 2.5 inches in height.

[c12] 12. An intake manifold for an engine, including an engine block with at least one cylinder inlet, the intake manifold comprising:

a housing having an exterior surface and defining an interior cavity, the housing having at least one air in-flow passage from the exterior surface of the housing to the interior cavity, the housing having at least one air-fuel out-flow passage from the interior cavity to the exterior surface of the housing, and the housing including an upper section and a lower section, the upper section mounted on the lower section, the lower section mounted on the engine by one or more lower section fasteners by advancing the fasteners through the lower section to the engine in one direction, and the upper section mounted on the lower section such that the lower section fasteners are prevented from moving in any other direction.

[c13] 13. An intake manifold of claim 12, further comprising: the upper section is mounted on the lower section to enclose the interior cavity.

[c14] 14. An intake manifold of claim 12, further comprising: the upper section having one or more air compressor mounting passages from the upper section interior cavity surface to the upper section exterior surface, the air compressor mounting passages extend through the up-

per section.

[c15] 15. An engine comprising:
an engine block having at least one cylinder with an inlet for supplying an air-fuel mixture to the cylinder; and an intake manifold comprising a housing defining an interior cavity and having an exterior surface, and at least one air in-flow passage from the exterior surface of the housing to the interior cavity, the housing including at least one side wall, the side wall having a substantially planar side wall interior cavity surface and a side wall exterior surface, the side wall defining at least one air-fuel out-flow passage from the interior cavity to the side wall exterior surface, wherein the intake manifold is mounted to engage the engine block so that the air-fuel out-flow passage and the engine cylinder inlet are aligned to allow the air-fuel mixture to pass from the air-fuel out-flow passage to the engine cylinder inlet.

[c16] 16. An engine comprising:
an engine block with at least one cylinder inlet; and an intake manifold comprising a housing defining an interior cavity and having an exterior surface, at least one air in-flow passage from the exterior surface of the housing to the interior cavity, and at least one air-fuel out-flow passage from the interior cavity to the exterior surface of the housing, the housing including an upper

section and a lower section, the upper section mounted on the lower section, the lower section mounted on the engine by one or more lower section fasteners by advancing the fasteners through the lower section to the engine in one direction, and the upper section mounted on the lower section such that the lower section fasteners are prevented from moving in any other direction.